

# NiceLabel Web Printing Installation Guide

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# Architecture

## Deployment

### Overview

The role of Control Center is to define Web Printing users and to host their solution files.

In NiceLabel 2017, solution files (.nsln extension) can be used with labels and/or forms. Even label files alone can be used as a solution without creating a form. In such case, a predefined print dialog is used for label printing.

When a Web Printing user logs in to the server, the application (solution) runs using the NiceLabel Web Client application.

Typically, Web Printing user print labels that contain variable data. The selected label template takes the provided data and displays its preview in a form. Labels are printed with the selected data. The data usually originates from a Microsoft SQL database hosted within the company's information infrastructure.

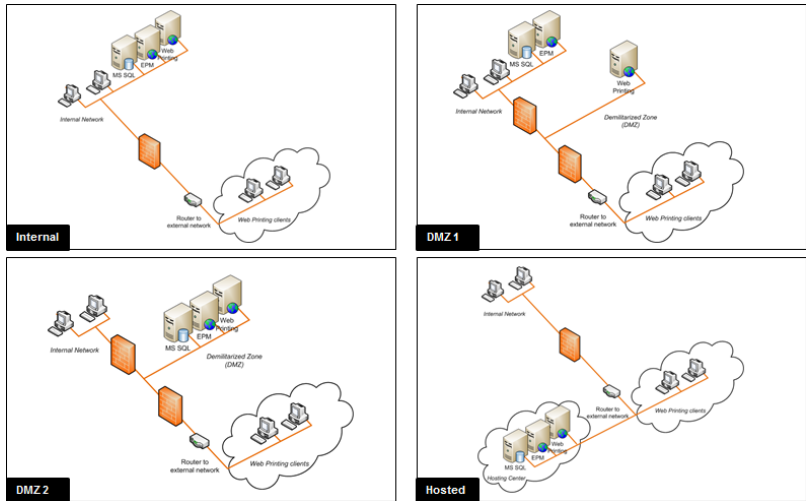
**NOTE** Data source is not limited to Microsoft SQL. Data can be stored using any type of relational database.

The application running in Web Client doesn't communicate directly with the database. All communication is channeled through the Web Printing site. When a database record is required, the application sends a request to Web Printing site, which redirects it to the database server. The response travels in the opposite direction. In the same way, the Web Printing site records print events and stores the data in database.

### Installation Scenarios

Depending on the architecture of the solution as well as on the hardware being used, the server components (NiceLabel Control Center, Web Printing site, and Microsoft SQL Server) can all be installed on a single machine or on separate systems. These two options depend on a number of factors, such as:

- Can you allow the Web Printing application to be installed as a part of the corporate information infrastructure at all? If the company policy prevents you from any local installation, Web Printing will be hosted outside the company network. In this case, the relevant databases (those which are used for label printing) are copied into the hosted environment.
- Does the company infrastructure support the installation of server components on dedicated servers?
- Who are the Web Printing users that are connecting to the server? Can you trust these users by default (e.g. they are domain users, or company staff) or are they external users connecting to server using an Internet connection?
- Can the existing Microsoft SQL server be used for Web Printing data or do you need to use a new Microsoft SQL server?
- Do you plan to allow Web Printing to connect to the company's database? If not, the existing data must be offloaded to a dedicated Microsoft SQL server. You will have to make sure the databases are synchronized.
- Will Web Printing be used as a stand-alone application with its own login system, or will another existing application handle the login and embed Web Printing into an existing web page?



Web Printing can be installed using various installation scenarios. Some of the possible scenarios are listed in the table below:

SCENARIO	DESCRIPTION
<p>All server components are installed on the same server</p>	<p>In this case you either:</p> <ul style="list-style-type: none"> <li>Trust the connecting users completely. The software is installed on the company's information infrastructure – perhaps even on the existing Web server. The existing Microsoft SQL server can be used to host the Web Printing database. You will have to grant access to the Web Printing site for the connecting Web printing users. <ul style="list-style-type: none"> <li>If these users belong to internal company staff, they might already have the access to the Web Printing site.</li> <li>If these are external users connecting over the internet, configure your firewall/proxy to allow inbound connections.</li> </ul> </li> <li>Do not trust the connecting users. Do not install Web Printing on the company's information infrastructure. Instead, contact a server-hosting company and install all components outside your company's infrastructure. If the Web printing users need the data from your company's databases, you will have to make the data available to Web Printing site.</li> </ul>
<p>Control Center and Web Printing site installed on the same server, Microsoft SQL installed on a separate server</p>	<p>In this case, the Microsoft SQL server is installed on a separate server. This can either be an existing Microsoft SQL server which already hosts some databases, or a new server. You expect a busy web server and/or Microsoft SQL server, and plan to use dedicated machines for web and data processing.</p>
<p>All server components installed on separate servers, Web Printing site in DMZ</p>	<p>In this case, the installations should be distributed because of performance issues (Web server and Microsoft SQL server running on separate servers). More importantly, the Web Printing site is not installed on your internal infrastructure.</p> <p>External Internet users are going to connect to your Web Printing server – the server exposed to Internet does not meet your safety standards. Proxy server/firewall can be placed in front of the Web Printing site as the first line of defense. To establish a robust installation of the Web Printing site, set it up in a DMZ (demilitarized zone). This is a physical or logical sub-network that</p>

	<p>will make the Web Printing site accessible to external (untrusted) users. If an attacker succeeds to access the server, he will only have access to the equipment in the DMZ, but not the company's network.</p> <p>Web Printing site must still access the internal network to load the solution and get the data for label printing. This involves opening communication to the back-end Microsoft SQL server (a few opened dedicated ports).</p> <div style="border: 1px solid green; padding: 5px;"> <p><b>NOTE</b> This deployment scenario is one of the reasons why Web Printing site requires a SQL-level user name to connect to the Control Center database (not a domain-level user name). If the attacker compromises the connection to the SQL server, he will only have the credentials to the Control Center database and no harm can be done to the rest of the databases or other internal servers.</p> </div>
Other combinations	<p>Other combinations of server installations are possible. Each server component can be installed on a different server, just bear in mind that they require firewall/proxy rules in order to see each other:</p> <ul style="list-style-type: none"> <li>• Control Center must have access to the Microsoft SQL server (Windows authentication, local Control Center Windows users (EPM_USER, EPM_DBADMIN) are created on the server where Microsoft SQL Server is installed)</li> <li>• Web Printing site must have access to the Microsoft SQL server, where Control Center database is installed (SQL authentication is used, so the Web Printing site can be installed outside of the company's network and domain)</li> </ul>

## Security Suggestions

This section gives recommendations on how to protect the connecting users, and the integrity of data and infrastructure.

In most cases, Web Printing site will allow external users to connect and print labels, so it will be exposed to the Internet. You don't want to reveal any confidential information to unwanted users. With security taken as the highest priority, the application must be reliable and trustworthy, minimizing the risk of security breaches. The Web Printing site encrypts important configuration data on the disk, and secures the communication to the application running in the browser.

However, it's not just how the Web Printing product was developed and tested but also how you install it and place it into action.

Best security practices:

- **Regularly install security updates from Microsoft Windows Update.** Updates for the IIS are particularly important, because you expose the Web Printing site to the Internet.
- **Set up a firewall/proxy.** Only open the services/ports which must be opened to the public, such as port 80 for IIS.
- **Limit access privileges to the Document Storage.** This is a WebDAV-based file repository running on the same server as NiceLabel Control Center. It hosts the solution files. By default, anybody can access Storage Server at `\\server@8080\DavWWWRoot`
- **Install Web Printing site in the DMZ.** Minimize damage in case of a compromised server.
- **Limit the SQL user permissions.** Microsoft SQL Server user account that the Web

Printing site will use to connect to the database should have access to the Control Center database (NiceAN) only. If somebody gains access to the Microsoft SQL Server, it will be limited to the NiceAN database, and other parts of the Microsoft SQL Server will not be reachable by this user's privileges.

- **Enable user authentication for NiceLabel Control Center.** Only allow login for trustworthy administrative users. By default, anybody that connects has administrative privileges.
- **Set up the Web Printing site to be accessible over a secure link only.** Enable the HTTPS/SSL protocol so that nobody can eavesdrop on the communication between the user and the server. For more details, see the chapter Installing Web Printing Site with HTTPS/SSL Support.

## Overview

NiceLabel Web Printing is a server/client based solution primarily designed for barcode label printing. NiceLabel Web Printing belongs to the NiceLabel LMS products. To use Web Printing, Control Center must be installed and activated.

On the client side, PowerForms (one of the NiceLabel 2017 product levels) is used for label designing and solution building.

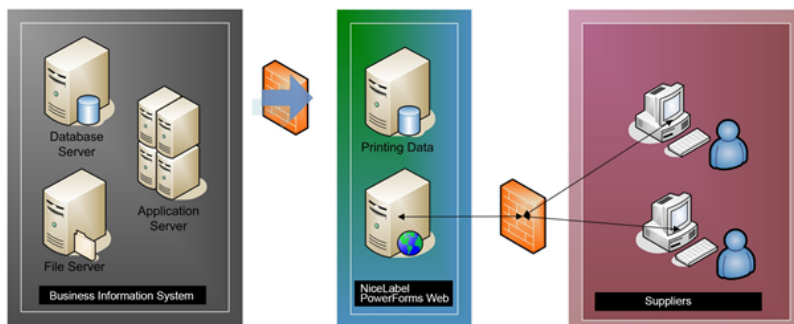
**NOTE** For more information about label designing and deployment, see chapter "Deployment" on page 3.

On the server side, Control Center and Web Printing both run as web applications which handle licensing for Web Printing users and distribute their printing applications. All printing activities are logged in the Control Center database. The administrator can use a standard Internet browser to:

- manage the Control Center
- manage licenses
- access solution files in the web-based storage repository (Document Storage)
- set up and manage Web Printing users
- assign solutions to users
- view solution printing history

To summarize, the Web Printing environment consists of the below listed components. All components are added to the existing Control Center product.

- Server components: NiceLabel Web Printing site.
- Design components: NiceLabel Designer running as PowerForms product level.
- Print client components: installed on each workstation that prints labels.



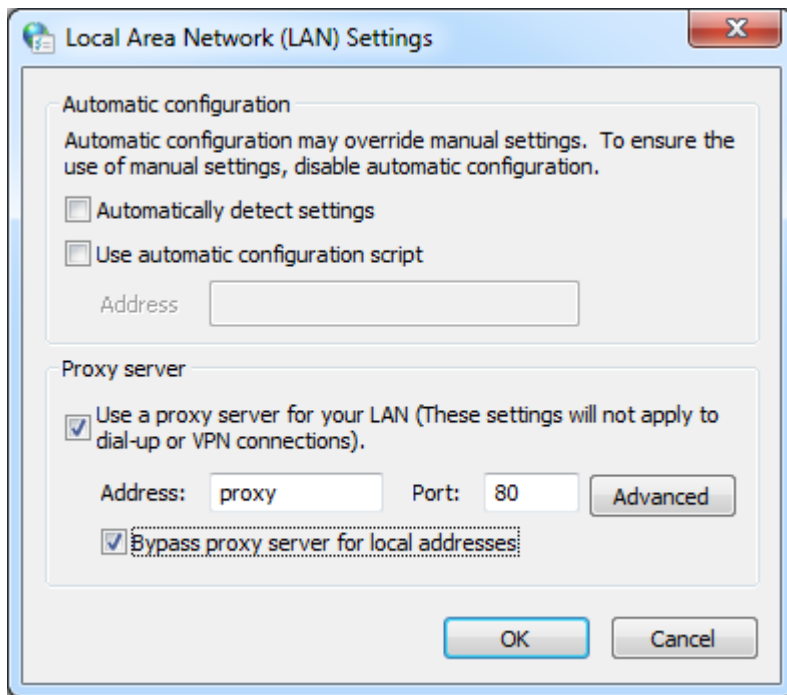
# Checklists

## Pre-installation Checklist

SERVER CHECKLIST	
<input type="checkbox"/>	<p><b>Access to Windows accounts with administrative privileges and SQL system administrator</b></p> <p>To install NiceLabel software you must have access to the user with administrative privileges:</p> <ol style="list-style-type: none"><li>1. On the Windows Server machine with Internet Information Services role where you will install NiceLabel Web Printing.</li><li>2. On the SQL Server, so the database NiceAN can be added to the SQL Server. The entered user must have the owner role defined on the database NiceAN.</li></ol> <p>"Configuring Microsoft SQL Server" on page 14.</p>
<input type="checkbox"/>	<p><b>Internet access for activation process</b></p> <p>You will need the internet access to activate Web Printing. You can activate Web Printing from any other computer that has internet access.</p>
<input type="checkbox"/>	<p><b>Meeting prerequisites for IIS (Internet Information Services) Web server</b></p> <p>"Installing IIS Web Server" on page 10 for Web Server Roles that you have to enable in the IIS.</p>
<input type="checkbox"/>	<p><b>Meeting prerequisites for Microsoft SQL Server</b></p> <p>List of changes that you need to complete on Microsoft SQL Server:</p> <ul style="list-style-type: none"><li>• Enable mixed mode authentication in the SQL Server: Windows authentication and SQL Server authentication.</li><li>• Add a new SQL user.</li><li>• Apply security permissions for the new SQL user to be able to access Control Center database NiceAN, where the solution files for Web Printing have been stored.</li></ul>

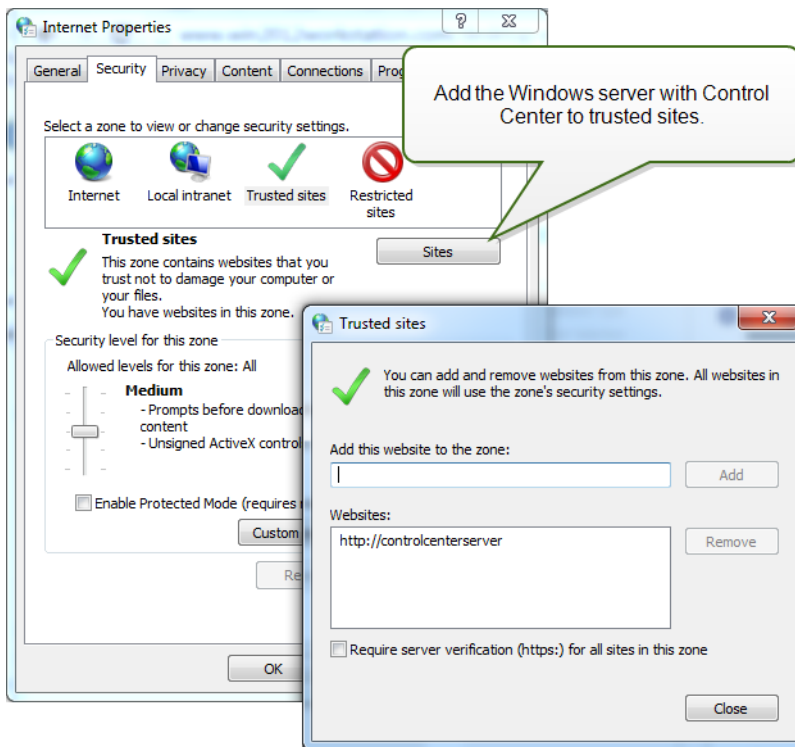
## Post-installation Checklist

CLIENT CHECKLIST	
<input type="checkbox"/>	<p><b>Support for WebDAV to use files in Document Storage</b></p> <p>Each machine that need to access data inside a Document Storage repository, must have the WebDAV support installed. Some Windows operating systems have the WebDAV support already installed. With others, you have to add the support before you can access the data.</p> <div style="border: 1px solid green; padding: 5px;"><p><b>NOTE</b> The "client" is not only NiceLabel Designer, but any software accessing the Document Storage, including NiceLabel Automation or even Windows Explorer.</p></div> <p>"Installing Support for WebDAV" on page 25.</p>
<input type="checkbox"/>	<p><b>If using proxy server, exclude local traffic from proxy</b></p> <p>Bypass the proxy server for local addresses, or the client might not get the license from NiceLabel Control Center. This makes files in Document Storage unavailable. For more information, see <a href="#">Knowledge Base article KB163</a>.</p>



□ **Add Control Center to the Trusted sites**

If you have troubles using NiceLabel Control Center, add it to the list of Trusted Sites in your browser.





# System Requirements

## NiceLabel 2017

- CPU: Intel or compatible x86 family processor
- Memory: 2 GB or more RAM
- Hard drive: 1 GB of available disk space
- 32-bit or 64-bit Windows operating systems: Windows Server 2008 R2, Windows 7, Windows 8, Windows 8.1, Windows Server 2012, Windows Server 2012 R2, Windows 10
- Microsoft .NET Framework Version 4.5
- Display: 1366×768 or higher resolution monitor

## Additional Requirements for NiceLabel Control Center and NiceLabel PowerForms Web Components

- Database Server: Microsoft SQL Server 2005, Microsoft SQL Server 2008, Microsoft SQL Server 2012, Microsoft SQL Server 2014 (Express Edition of products listed above are also supported)
- IIS 7 or IIS 7.5 or IIS 8

# Installing Windows Server Prerequisites

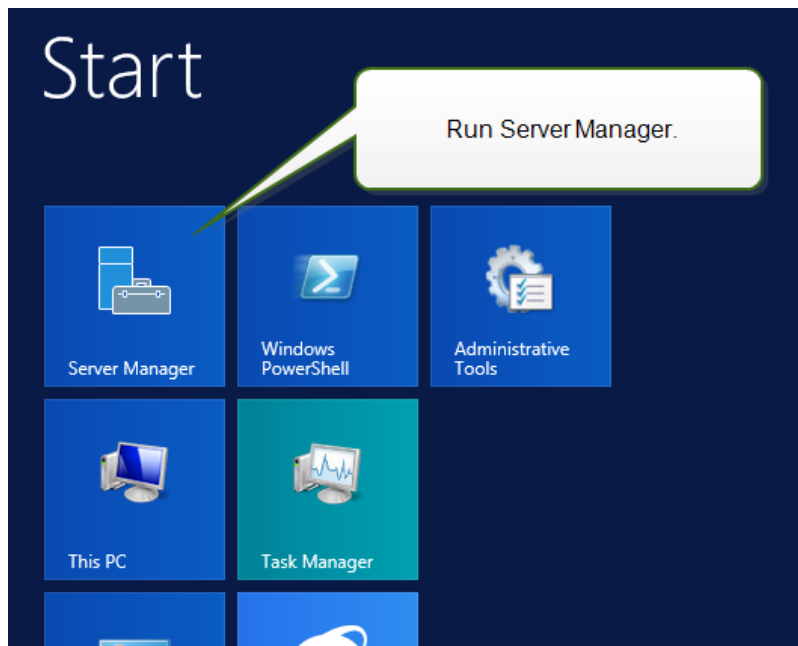
## Installing IIS Web Server

Internet Information Services (IIS) is the Microsoft Web server. It serves as a mandatory component to run NiceLabel Web Printing product. IIS is available with Windows Server operating systems, you just have to enable and configure it.

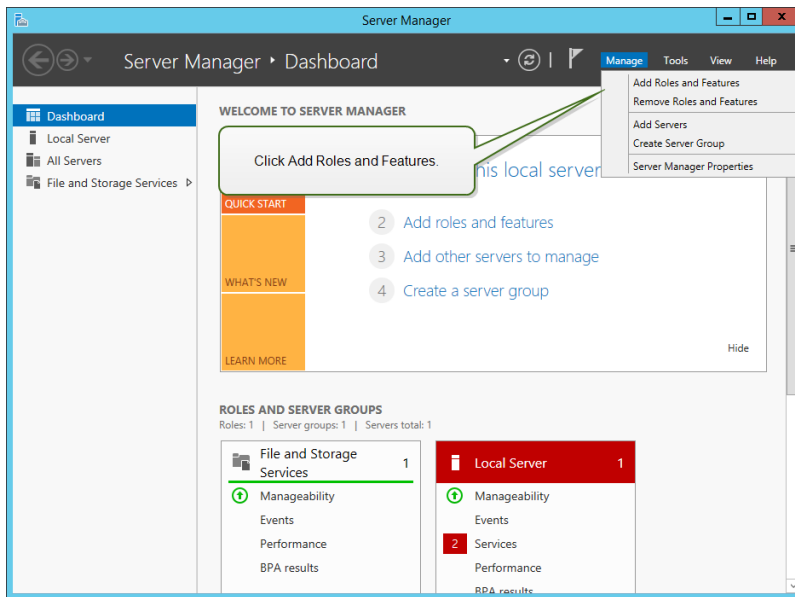
**NOTE** If you are installing Web Printing 2017 on the same server as used by the Control Center, skip the steps below.

Do the following:

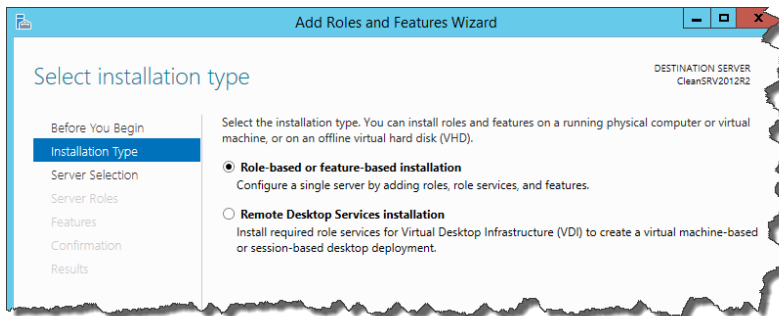
1. Log in to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.
2. Start **Server Manager** from the **Start** screen.



3. Click Manage, then click **Add Roles and Features**.

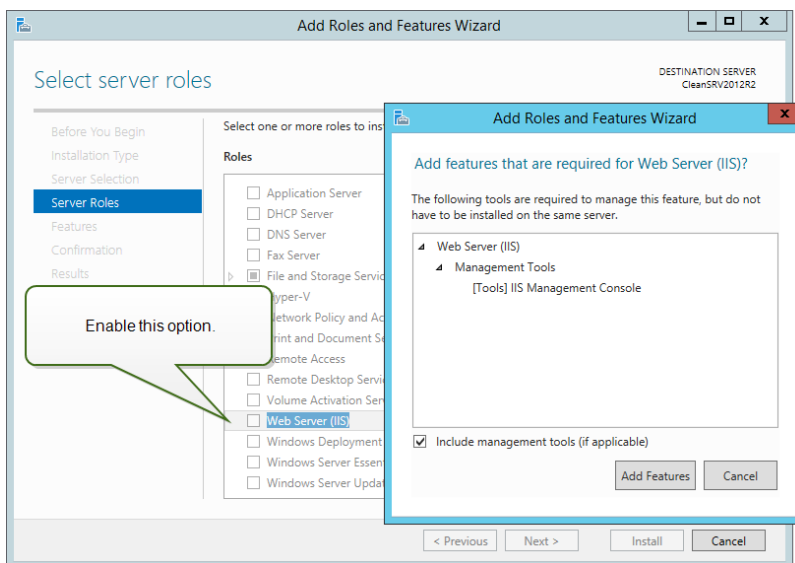


4. Select **Role-based or feature-based installation**. Click **Next**.



5. Select a local server from the server pool. Click **Next**.

6. In Server Roles step, enable the **Web Server (IIS)** option. Click **Add Features**. Click **Next**.



7. Select **Web Server Role (IIS) > Role Services**. Make sure the following role services are

enabled. Click **Next**.

In **Common HTTP Features**.

- Default Document
- Directory Browsing
- HTTP Errors
- Static Content

In **Health and Diagnostics**:

- HTTP Logging

In **Performance**:

- Static Content Compression

In **Security**:

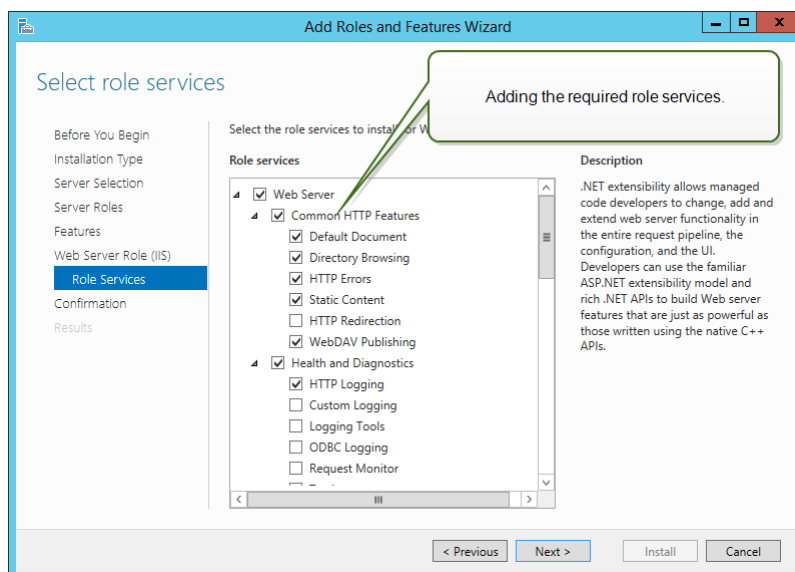
- Request Filtering
- Basic Authentication
- Windows Authentication

In **Application Development**:

- .NET Extensibility 4.5
- ASP.NET 4.5
- CGI
- ISAPI Extensions
- ISAPI Filters

In **Management Tools**:

- IIS Management Console

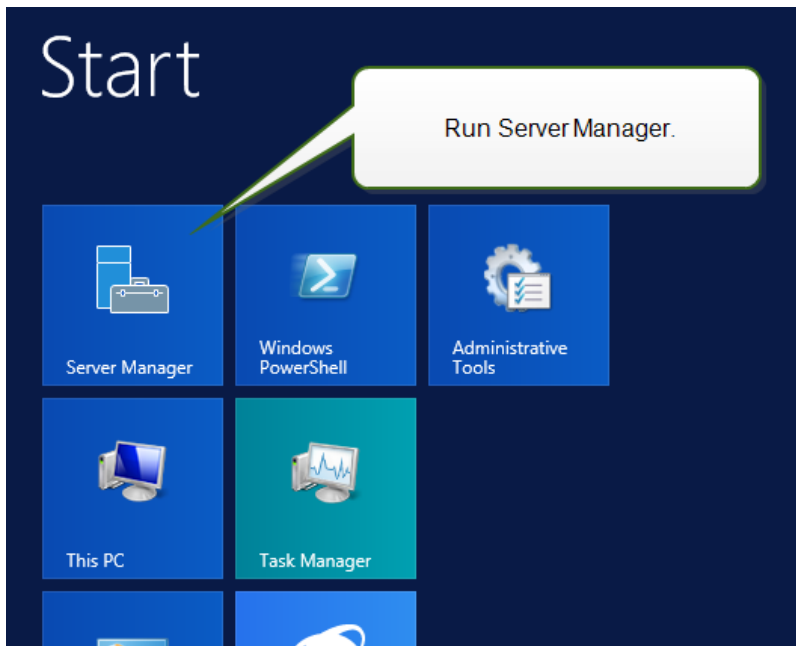


8. Click **Install**. Click **Close** when the installation completes.

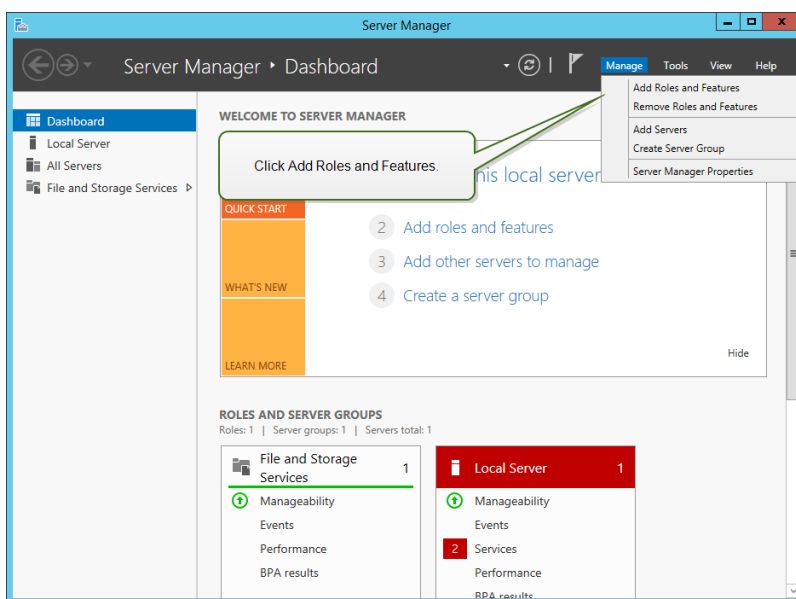
If you are using Windows Server 2012 R2, you must also install the HTTP-Activation .NET feature.

Do the following:

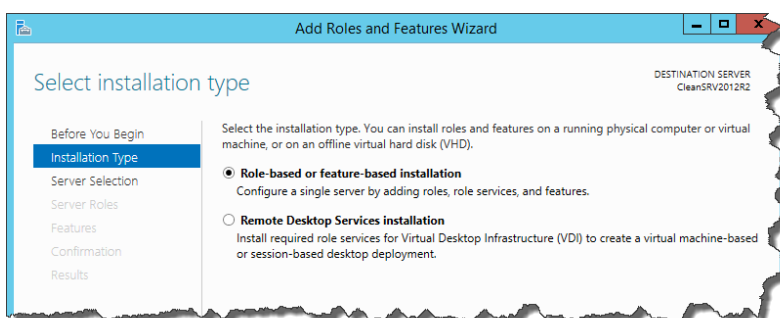
1. Login to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.
2. Start **Server Manager** from the **Start** screen.



3. Click Manage, then click **Add Roles and Features**.

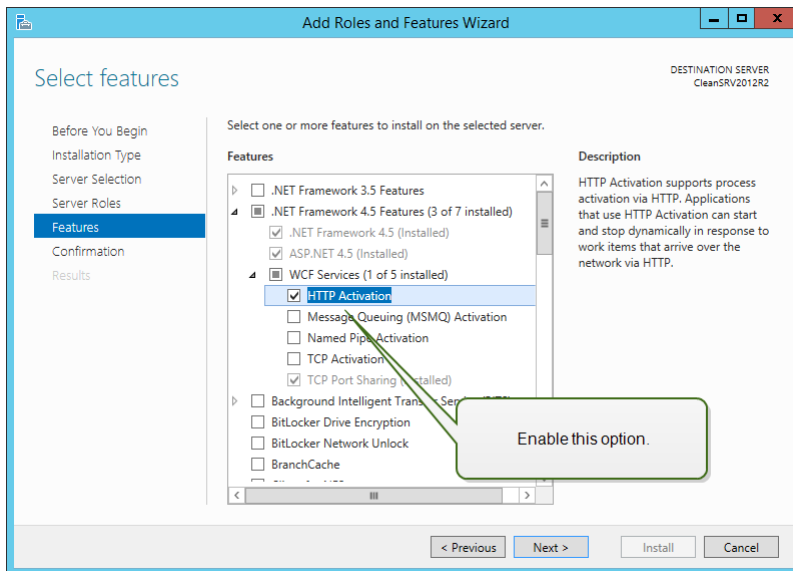


4. Select **Role-based or feature-based installation**. Click **Next**.



5. Select a local server from the server pool. Click **Next**.

6. Click **Features** in the selection list on the left.
7. Expand **.NET Framework 4.5 Features**.
8. Expand **WCF Services**.
9. Enable **HTTP Activation**. Click **Next**.



10. Click **Install**. Click **Close**.

## Configuring Microsoft SQL Server

Web Printing belongs to NiceLabel LMS product range. To activate Web Printing, Control Center must be installed and active.

NiceLabel Web Printing server components require a running Microsoft SQL Server to store the information about users, their solutions, licenses, web printing activities etc.

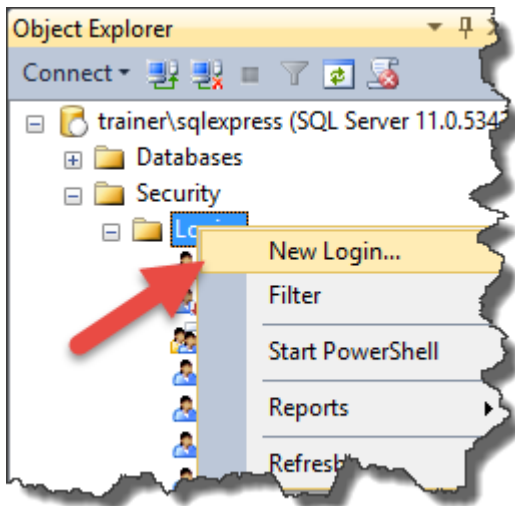
Your Microsoft SQL Server has already been set in order to install NiceLabel Control Center. NiceLabel Web Printing only requires access to the existing Microsoft SQL Server, which hosts the Control Center database NiceAN. The same database is used by Control Center and by Web Printing site. Control Center accesses the database using Windows authentication whereas Web Printing site accesses the database using SQL authentication.

Before you start the NiceLabel Web Printing site installation, you need to add the SQL user with sufficient privileges to access the NiceLabel Control Center database. The Web Printing site will use this SQL user to connect to the Control Center database.

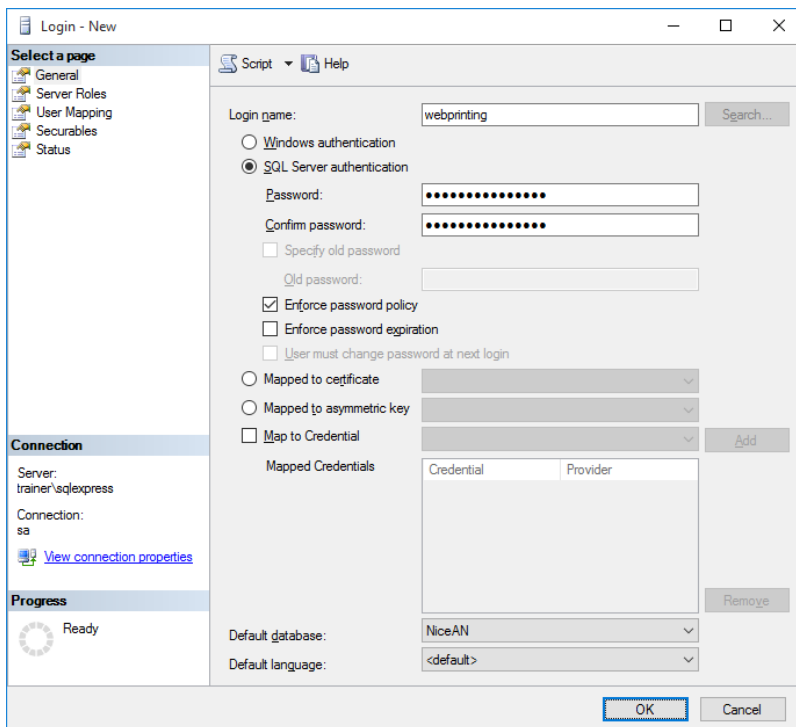
To create an SQL user with sufficient privileges in Microsoft SQL Server 2005, do the following:

**NOTE** Take similar steps if you have Microsoft SQL Server 2008, Microsoft SQL Server 2012 or Microsoft Server 2014.

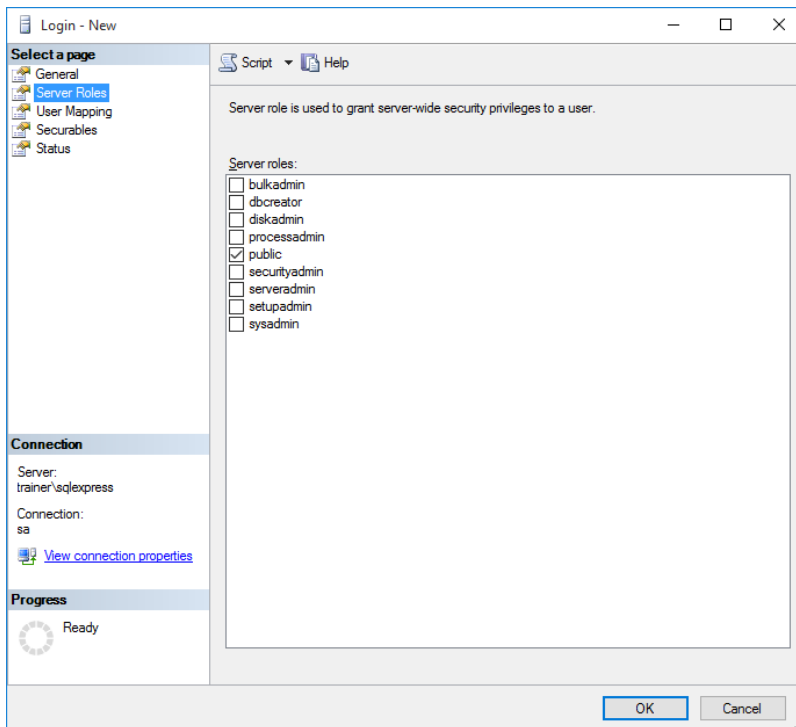
1. Run **SQL Server Management Studio** to manage your SQL server. You might have installed it on the machine with SQL server installation, or any other computer that is allowed to manage the SQL server. If you're not sure where to find this application, contact your system administrator.
2. Enter the correct server name, authentication type, login and password. If you're not sure what to use, contact your system administrator.
3. In Object Explorer, expand the **Server name**, then **Security**, then **Logins**.
4. Right-click the **Logins**, then select **New login**.



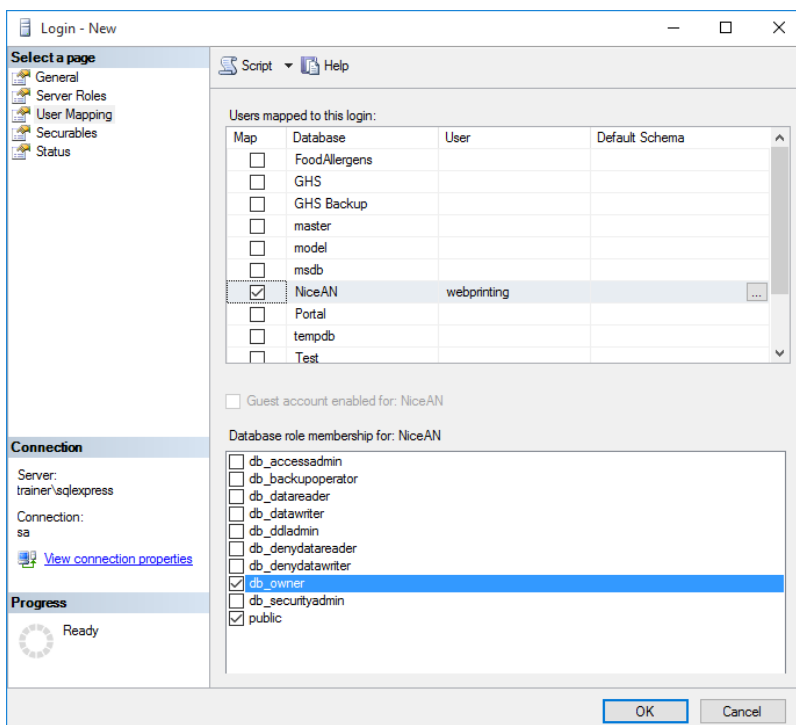
5. You are on the **General** page.  
For **Login name**, enter the current user name.



6. Select **SQL Server authentication**.
7. Enter the password for the new user.
8. Disable the **Enforce password expiration** option. The entered password will never expire.
9. Disable the **User must change password at next login** option.
10. Set **Default database** to **NiceAN**.
11. Go to **Server Roles** page.
12. Make sure the **public** role is enabled.



13. Go to **User Mapping** page.
14. Select the database **NiceAN**.
15. For the **Database role membership for: NiceAN** enable the options **db\_owner** and **public**.

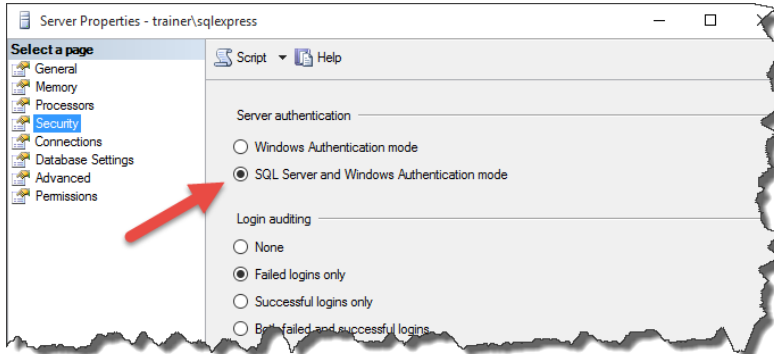


16. Click **OK**.

Then, make sure your SQL server allows both Windows domain user and SQL user login:



1. In Object Explorer, right-click the server name, then select **Properties**.
2. Select the page **Security**.
3. For Server authentication select **SQL Server and Windows Authentication Mode**. This will enable both Windows-authorized users and SQL-authorized users to connect to the SQL server.

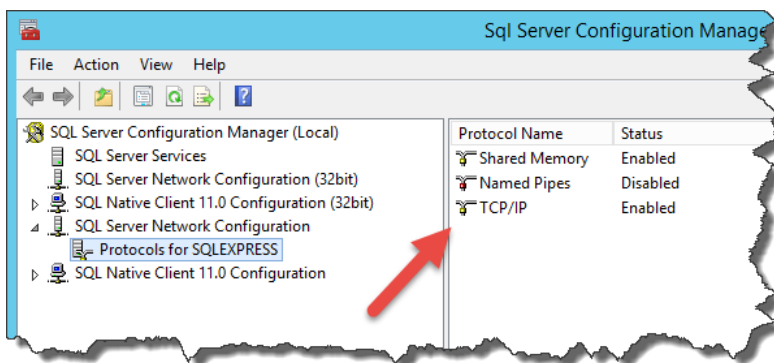


4. Click **OK**.
5. Close the **SQL Server Management Studio**.

Lastly, make sure your SQL accepts communication via TCP/IP channel.

**NOTE** This step is required only when the SQL Server and IIS are installed on two different machines.

1. Run the **SQL Server Configuration Manager** on the Windows Server machine where you have SQL Server installed.
2. Expand the option **SQL Server Network Configuration**.
3. Select **Protocols for <instance name>**.
4. In the right pane, select **TCP/IP** protocol, then right click it and select **Enable**.



**NOTE** For more information about interaction between Microsoft SQL Server and NiceLabel, "Deployment" on page 3.

# Installing the Software

## Installing Server Components

### Installing Web Printing Site

Web Printing Site is the Web application to which the Web users log in and get their solution from. See section "Deployment" on page 3 for details about the usual installation scenarios and which server should be used to host this application.

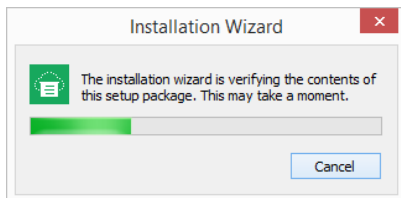
Install the Web Printing site on the same Windows computer as Control Center, or install it on any other Windows computer.

**NOTE** You must be logged on the server with administrative rights to be able to perform the software installation.

To install the Web Printing site, do the following:

1. The Web Printing site will connect to the Control Center database using the SQL user authentication. Before you begin with the installation, make sure that you know the user name and password for the SQL user with sufficient privileges for the Control Center database. You will need this info during the installation process. "Configuring Microsoft SQL Server" on page 14.
2. To ensure a complete installation, close all open applications before you start.
3. Download the software package or insert the NiceLabel DVD in your DVD-ROM drive. Web Printing application installation checks the installation package content.

**NOTE** If the installation wizard does not start automatically, go to the main directory on the DVD and double-click the `NiceLabelWebPrinting2017.exe` file.

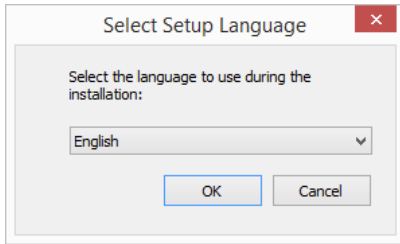


Before the actual installation starts, the wizard verifies if the following prerequisite components are installed on the server:

- Microsoft IIS
- Microsoft .NET Framework 4.5

If the .NET component is not present on your system, it will be installed automatically before the wizard continues.

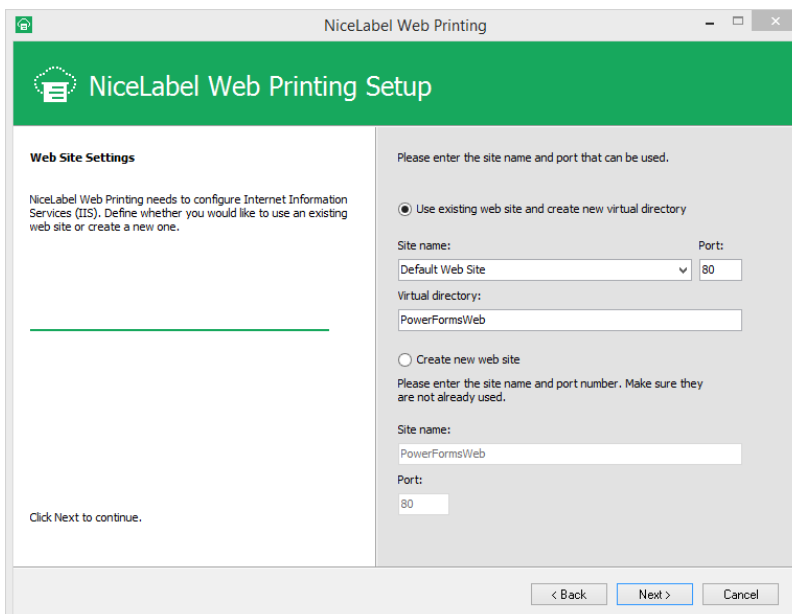
4. Select installation language from the drop-down list and click **OK**.



5. Follow the setup wizard prompts.
6. Define the IIS settings for the Web Printing site and define how the users will access the page:
  - It can be installed as virtual directory below the default web site and the virtual folder name can be configured. For example, the site can be accessible at `http://<server>/PowerFormsWeb`.
  - It can be installed as a new web site. Be careful when providing the port number. You can only use ports not in use by any other service on this computer. For example, the site can be accessible as `http://<server>:81/PowerFormsWeb`, if you have defined the port 81 if you have defined the port 81.
  - You can also define the host header values, so your site responds with a friendly name. For example, if you define a friendly name 'mypowerformswebserver' and define host header value for Web Printing site, it will also respond at the address `http://mypowerformswebserver`.

See [NiceLabel Knowledge Base article KB200](#) for more information on how to set up friendly names.

**NOTE** You can install the Web Printing site as a new site (1<sup>st</sup> level), or as virtual directory within the selected Web site (2<sup>nd</sup> level). You cannot install it in the 3<sup>rd</sup> level.



Click **Next**.

7. Select the Microsoft SQL server, where you have already installed the NiceLabel Control

Center database. Make sure you enter correct SQL name and instance name. If the MS SQL server is configured with a default instance, enter only the server name. If the MS SQL server is configured with instances, enter the server and instance name in server\instance syntax, for example `SERVERNAME\SQLEXPRESS`.

**WARNING** The Control Center database NiceAN MUST already exist on the selected Microsoft SQL server.

8. Enter the user name and password to access to the Control Center database in Microsoft SQL server. Provide SQL account credentials (not Windows account credentials!). The Web Printing site will connect to the database server as SQL user.

See "Deployment" on page 3 for more details about connectivity to the SQL server from NiceLabel software. See "Configuring Microsoft SQL Server" on page 14 for instructions on how to set up SQL user authentication in your Microsoft SQL Server.

9. When the Web Printing site setup is completed, you can leave the **Run Web Printing** site check box selected. Click the **Finish** button and the **Login** page for Web Printing site will open in a browser.

## Installing Web Printing Site with HTTPS/SSL Support

Typically, the Web Printing site will be accessed by an external Web printing user. The users will not connect from an internal (trusted) network, but from the Internet.

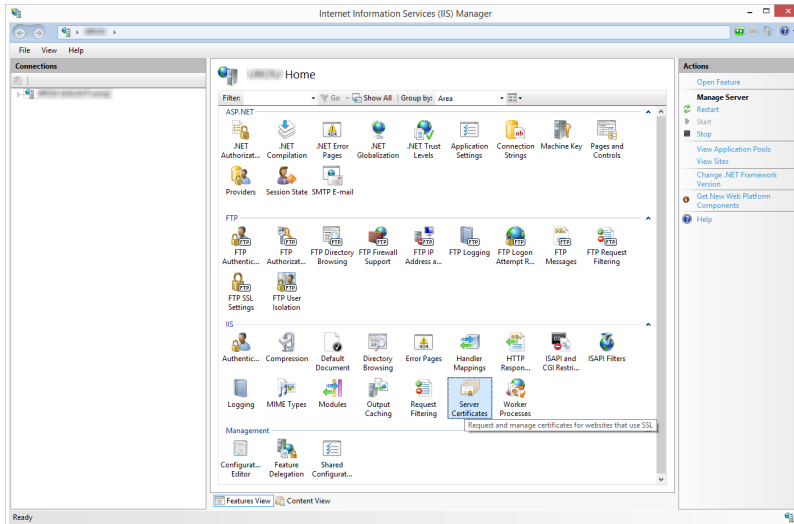
Because the data exchanged online can contain confidential information, not just user name and passwords for login, but also company-confidential information, it is vitally important to protect the data flow. Web Printing site supports SSL data encryption and it can be accessible over the HTTPS protocol.

During the Web Printing site's installation, you can define the virtual directory and virtual site where the site will respond to requests. However, just normal non-protected configuration can be set up during the installation.

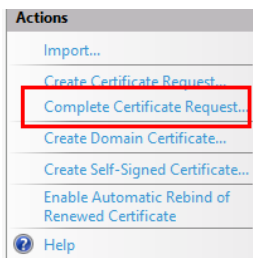
To enable SSL support in Windows Server 2012 R2, do the following:

**NOTE** Take similar steps if you have Microsoft Server 2008, Server 2008 R2, or Server 2012.

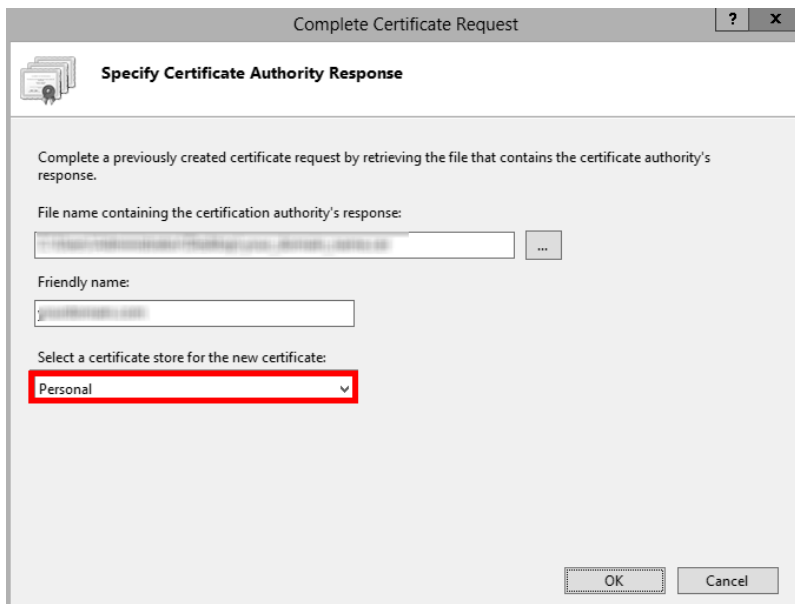
1. Create a Certificate Signing Request (CSR) and order the certificate from a certificate provider. Complete further steps after receiving the SSL certificate.
2. Open the .zip file containing your certificate. Save the file named `your_domain_name.cer` to the desktop of the web server you are securing.
3. Open the IIS manager.
4. Click the server name in IIS connections field (left side of the window).
5. Double-click **Server Certificates** in the IIS group of the central field of the window.



6. Click **Complete Certificate Request...** in the **Actions** field on the right side of the window.



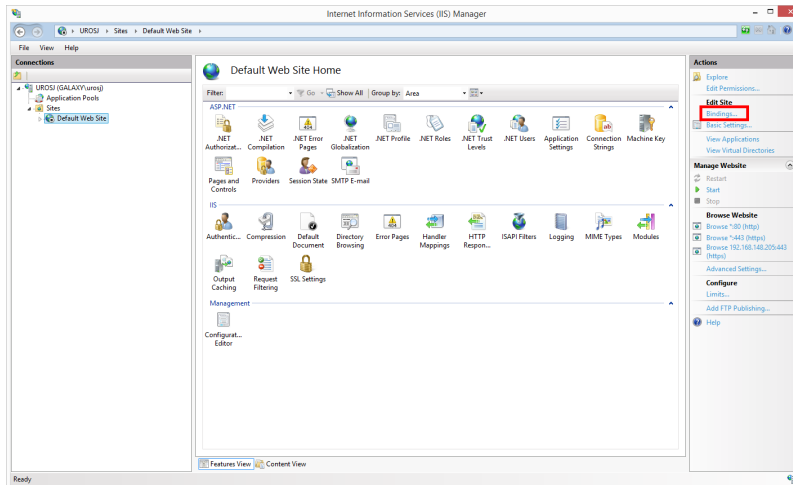
7. Browse to certificate file (.cer). Define a nter a friendly name. The friendly name is not part of the certificate itself, but is used by the server administrator to easily distinguish the certificate. Choose to place the new certificate in the Personal certificate store.



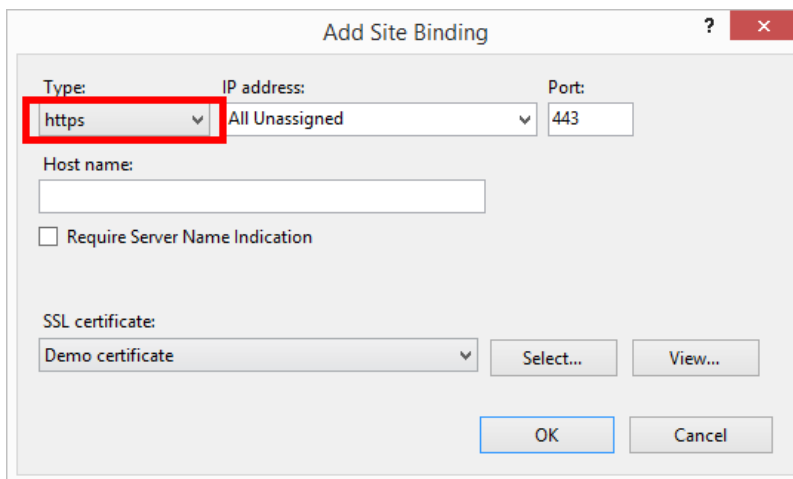
8. Click **OK** to install the certificate to the server.
9. Once the SSL Certificate has been installed on the server, assign the certificate to the

appropriate website using IIS.

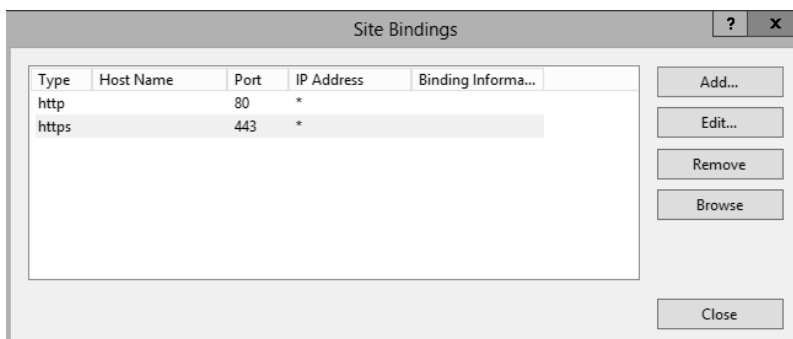
10. Select the name of the server to which the certificate was installed in the IIS connections field.



11. In the Site Bindings window click **Add...** The **Add Site Binding** window opens.
12. Select **https** under **Type**. The IP address should be the IP address of the site or **All Unassigned**, and the port over which traffic will be secured by SSL is usually 443.



13. Click **OK**.



Your SSL certificate has been installed.

13. Open Windows Explorer (or any other file manager).
14. Go to the NiceLabel Web Printing site folder. By default, the folder is located at:  

```
c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\
```
15. Create a backup of existing file `web.config`, or rename it. You want to keep the original file just in case you want to revert to original configuration.
16. Uncomment a line in the `web.config` file to enable HTTPS protocol:  

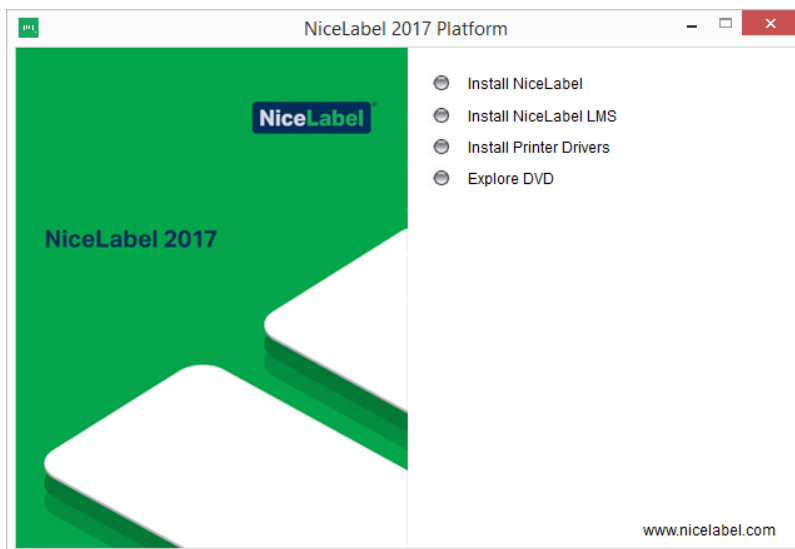
```
<!--<security mode="Transport" />-->
```

## Installing Client Components for the Designer Role

### Installing NiceLabel Designer

The clients are installed as NiceLabel Designer (PowerForms product level). To install it, do the following:

1. To ensure a complete installation, close all open applications before you start installing the software.
2. Insert the NiceLabel 2017 DVD in your DVD-ROM drive. An installation window will open automatically.  
 If the installation wizard does not start automatically, go to the main directory of your DVD and double-click the `START.EXE` file.
3. Click on **Install NiceLabel**.



4. Setup wizard for NiceLabel appears. Follow the wizard prompts.

For further detailed installation instructions refer to the [NiceLabel 2017 Installation Guide](#).

### Installing Printer Drivers

You can use the labeling software to design and print labels to standard office printers, such as laser, ink jet or dot matrix, to professional output devices, such as thermal label printers or other marking devices (inscribing laser, high-speed ink jet). For any printer you have, you first have to install the appropriate printer driver before you can use it. NiceLabel software is accompanied with the printer drivers all major thermal printer brands.

The NiceLabel Printer Drivers are available on the NiceLabel DVD. You can also download them from the NiceLabel Web site.

In this case, do the following:

1. Open Web Printing and navigate to **Download -> Label Printer Drivers**.

<http://www.nicelabel.com/downloads/printer-drivers>

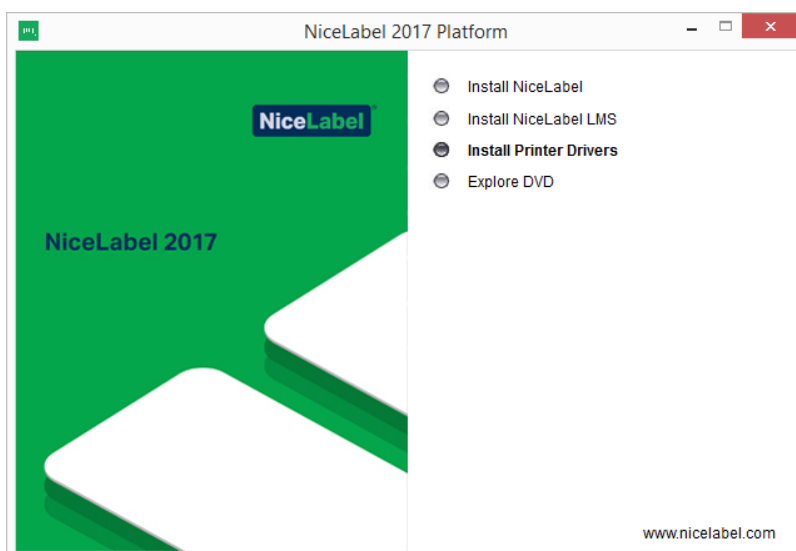
2. Click the printer brand name, for which you need the drivers.
3. Click **Download Now** button.
4. Double-click the downloaded self-extractable .EXE file.
5. Follow on-screen prompts.

### Printer Driver Installation Using the Printer Installation Wizard

1. Put the NiceLabel DVD in your DVD-ROM drive. The main installation application will start automatically.

**NOTE** If the installation wizard does not start automatically, double-click on **START.EXE** on the DVD.

2. Click **Install NiceLabel Printer Drivers**. The printer installation wizard will start.

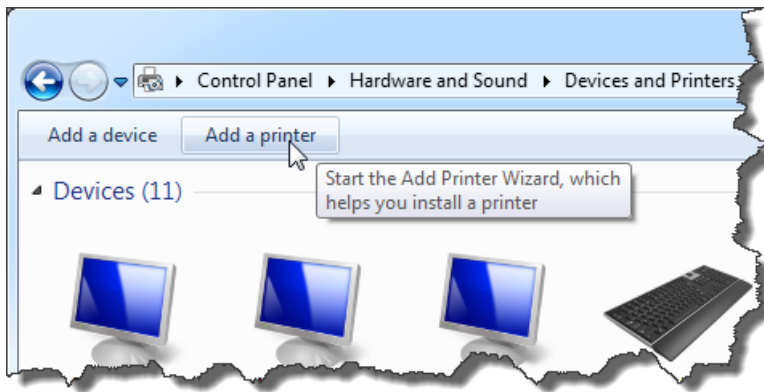


3. Follow on-screen instructions.
4. Select your printer from the list. Click **Next**.
5. Select the port where you have connected your printer and click the **Finish** button.

### Printer Driver Installation Using Windows Add Printer Wizard

1. In **Control Panel**, select **View devices and printers** to open **Devices and printers**.
2. Click **Add a printer**.





3. Follow the **Add a printer** wizard prompts. The actual steps vary depending on the version of your Windows operating system. Click **Have disk** button in the step where you can select printer manufacturer and model.
4. Insert NiceLabel DVD in your DVD-ROM drive and browse for the **Drivers** folder.
5. Select the folder of your printer name. You will see the list of all available printer models of the selected manufacturer.
6. Select your model, click **Next** and finish the installation.

### Controlling the Printer Installation Wizard (PRNINST.EXE) in the Command Prompt

You can automate the NiceLabel printer driver installation process hiding all dialog boxes. You can control the installer with the command-line options.

For more information see [Knowledge Base article KB253](#).

## Installing Support for WebDAV

WebDAV (Web-based Distributed Authoring and Versioning) is a set of extensions to HTTP protocol. It provides a framework for users to create, change and move documents on a server; typically a web server or web share.

NiceLabel Control Center provides WebDAV access to the files inside the Document Storage. All clients that interact with the Document Storage must have enabled the WebDAV support. Usually, the "clients" are NiceLabel PowerForms Desktop and NiceLabel Automation.

- **Current Windows operating systems** (such as Windows 8 and Windows 10). The WebDAV support is already installed.
- **Windows Server operating systems** (such as Windows Server 2012 R2). You have to enable the **Desktop Experience** feature.

### Enabling WebClient Service to "Automatic" Startup Type

Windows operating system supports access to WebDAV shares using WebClient service. When this service is stopped, users cannot access WebDAV shares.

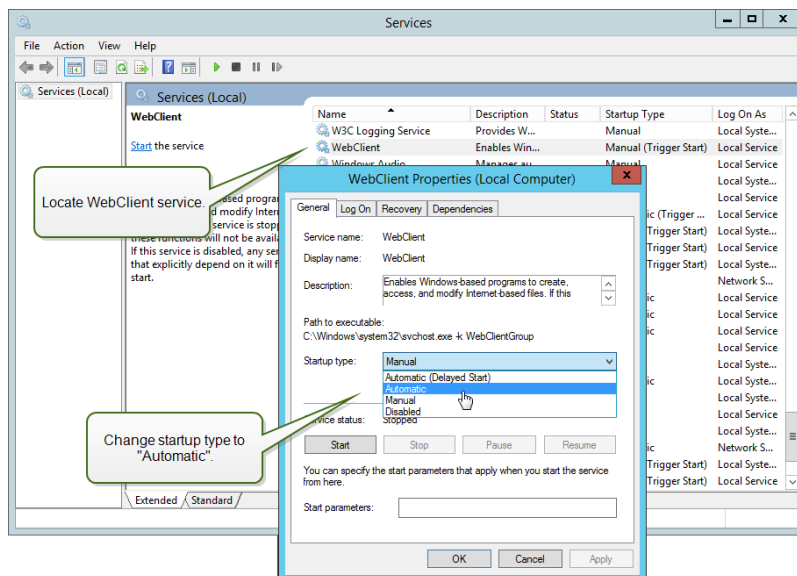
In Windows 7, 8 and 10, the WebClient service is enabled in Manual startup mode. In Windows Server 2008/2012 (including R2) editions, default setup does not have the WebClient service. You need to install Desktop experience package to add web client service.

To make sure the WebDAV support is always available, set the WebClient service startup type to **Automatic**.

Do the following:

1. Press Windows key (or <Ctrl> + <Esc>) to open the search.
2. Type in **Services** and run the Services window.

3. Scroll down in the list and locate the service **WebClient**.
4. Double click **WebClient** to open its properties.
5. In Startup type combo box select **Automatic**.



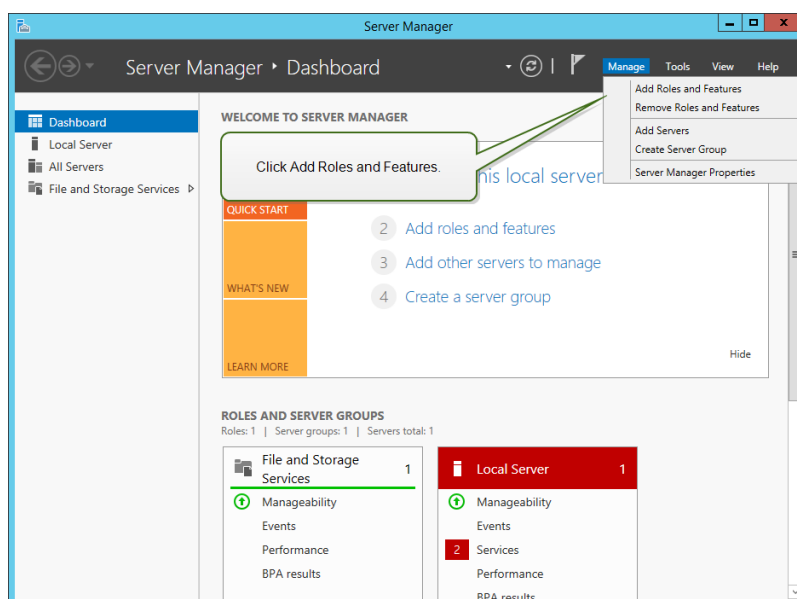
6. If the service is not running yet, click **Start** button.
7. Click **OK**.
8. Close **Services** window.

## Installing Desktop Experience

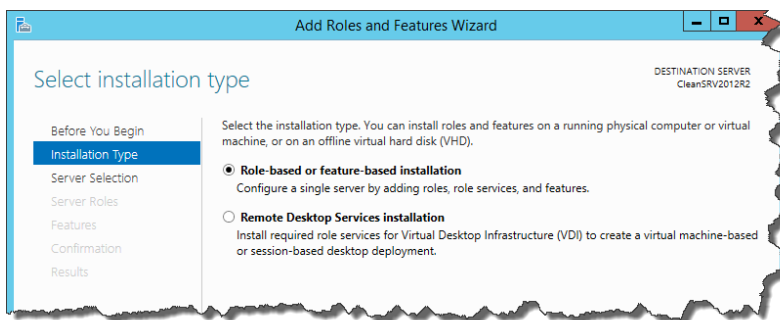
To install Desktop Experience on Windows Server operating system, do the following.

**NOTE** These instructions are for Windows Server 2012 R2.

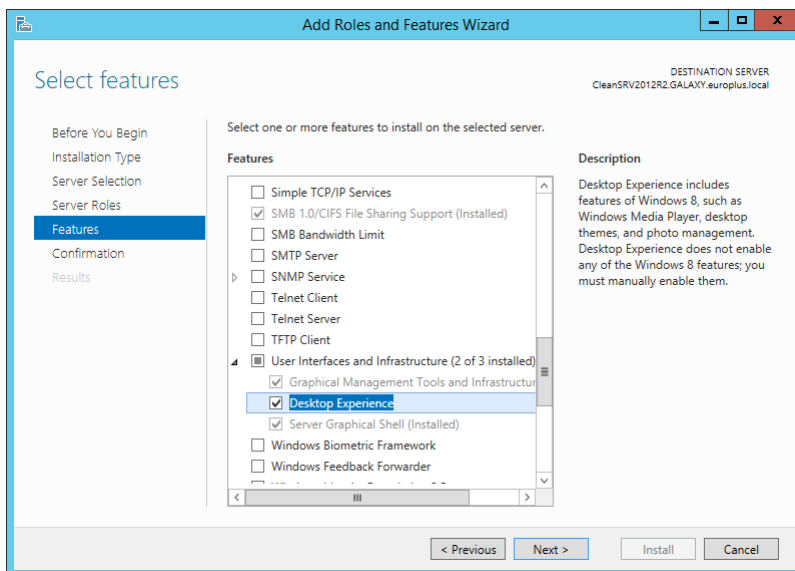
1. Start **Server Manager** from the **Start** screen.
2. Click **Manage**, then click **Add Roles and Features**.



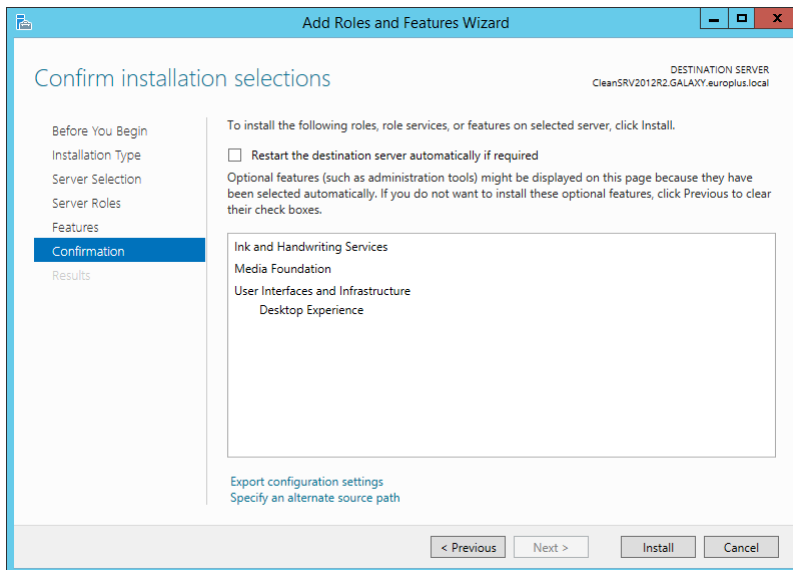
3. Select **Role-based or feature-based installation**. Click **Next**.



4. Select a local server from the server pool. Click **Next**.
5. The Desktop Experience feature is not a Server Role, so skip the Server Roles page by clicking **Next**.
6. In the **Select features** section, expand **User Interfaces and Infrastructure** and check the **Desktop Experience** check box. Select whether or not you also want to install the features required by Desktop Experience. Click the **Add Features** button to proceed. Click **Next** to proceed.



7. In the Confirmation section, optionally check the **Restart the destination server automatically if required** check box as the Desktop Experience feature will need a restart to complete. You can also manually restart the server after the wizard is complete.



8. Wait while the features are being installed. You can also close the **Add Roles and Features Wizard** window if you want – it will continue to run in the background.

## Upgrading from Older Version

To upgrade NiceLabel Web Printing from any previous version, you can perform an upgrade of all components. Install new version of all components over the existing installations without any prior removal of any component (in-place upgrade). Following these instructions will ensure that all the existing preferences, activation data and history information remain the same, and only the application files will be replaced with a new version.

### Upgrading Server Components

**WARNING** Make sure to upgrade the NiceLabel Control Center first, following by the Web Printing site. For more information about upgrading the NiceLabel Control Center, see **NiceLabel Control Center Installation Guide**.

To upgrade the Web Printing site, do the following:

**NOTE** Before upgrading the Web Printing site see [Knowledge Base article KB230](#).

1. Go to the Windows Server where the Web Printing Site is installed.
2. Run the installation of the new version of Web Printing site. Follow the prompts. First, the older version will be uninstalled, then the new version will install in its place. The existing configuration file will be saved to a backup location, then the new default configuration will be used instead.

### Upgrading Client Components

Do the following:

1. Go to the Windows workstation where the client design components are installed.
2. Run the installation of the NiceLabel Designer. Follow the prompts. First, the previous version will uninstall, then the new version will replace it.

**NOTE** For more information, see **NiceLabel 2017 Installation Guide**.

# Licensing

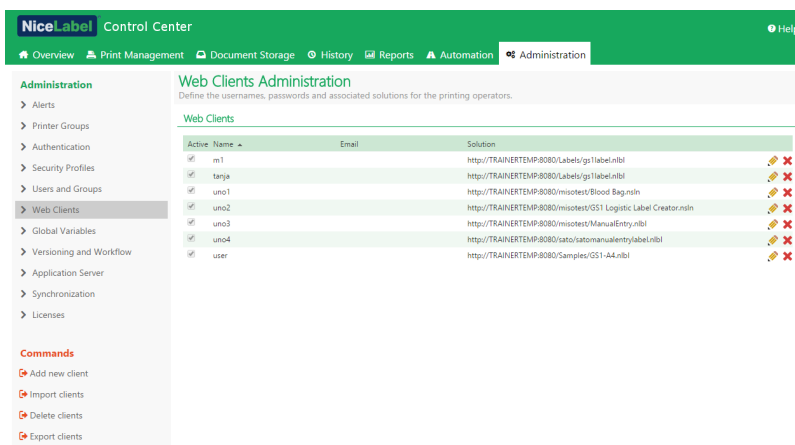
## Configuration of Web Printing Clients

Each user that is connected to the Web Printing site and prints labels, must be defined and activated inside the Control Center. You can define several Web printing users in Control Center, but they can only log into the Web Printing site when they are activated.

Every defined user is assigned a single or multiple printers. The number of printers is defined individually for each user. Each assigned printer consumes a single license.

To configure Web Printing clients, do the following:

1. Open the NiceLabel Control Center. You need the URL to open the Control Center, such as `http://server/EPM`.
2. Select the **Administration** tab then click section **Web Clients**.



3. Click the **Edit client** button (pencil icon) next to the existing user to edit his properties, or click **Add new client**, if no user is already defined.
4. Enable the option **Limit number of printers** to limit the selected user to a specified number of different printers. Enter the permitted number of printers in the first field below (**Number of printers**).
5. In user properties, enable the option **Active**.
6. Click **OK**.
7. The user becomes active and may start using the Web Printing site. The user is allowed to access the associated labeling solution. By default, its URL is `http://server/PowerFormsWeb`.

# Adjusting the Software

## Customization

The information in this topic relates to changes in the Web Printing site configuration file `web.config`. If you haven't yet changed the installer path, the default location for the file is set to `c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\`.

### Customizing Login Page

When the default (Forms) authentication is used, it is possible to customize the login page contents. The following attributes can be configured:

- Login page title. Default title is 'Web Printing'. To change the title, add the following application setting into the file `web.config`:

```
<appSettings>
<add key="LoginTitle" value="Custom login page title"/>
</appSettings>
```

- Width of the login page. Default width of the login page is 300 pixels. You can use the following application setting in the file `web.config` to change a default:

```
<appSettings>
<add key="LoginWidth" value="500"/>
</appSettings>
```

- Instruction text. You can add a text block with instructions for the printing user. You can configure the text itself and the height for the text by the following application settings in the file `web.config`:

```
<appSettings>
<add key="LoginInstruction" value="Instructions for the user. This
will be displayed below the title and above the login controls."/>
<add key="LoginInstructionHeight" value="40"/>
</appSettings>
```

### Web Printing Page Customization

Customize the Web Printing page by setting a key in the file `web.config`, which sets the title of the page that is shown in the internet browser. The default title is 'Web Printing'. You can change it by adding the following setting in the file `web.config`:

```
<appSettings>
<add key="WebPrintingPageTitle" value="Custom web printing page title"/>
</appSettings>
```

## Solution Initialization

When solutions are opened at the Web Printing site, you can set the initial data for variables in the solution. You can pre-set the variables on the default form for each user independently.

The same solution can be used for different users with different initial data.

## User-based Starting Variable Values

In some cases, form variable values need to be different from user to user. You may want to use the same solution for all of your suppliers, but want them to be able to see their individual data only. Every Web printing user defined in the Control Center includes a property named Variables, where variable values can be entered in the following syntax:

```
"VAR1" = "First name"
```

```
"VAR2" = "Last name"
```

**NOTE** If there is a space in the variable name or value, you must enclose the value in double quotes.

When a form is loaded, these values are parsed and the variables are set. In the example presented above, the variable named VAR1 would get the value First name, and the variable named VAR2 would get the value Last name.

When you have form objects connected to these variables, the objects are updated automatically.

## Initializing Variable Values through a Web Page Query String

Variable values can be added directly in a Web printing page query string. This approach allows you to adjust the Web printing site simply by providing a different URL.

Example of the URL:

```
http://<server>/PowerFormsWeb/default.aspx?Var1=%22First%20name%22&Var2=%22Last%20name%22
```

# Offline Mode

A majority of mission-critical services running on Web servers include key concerns of Internet access and availability. The availability includes two potential issues:

- Server availability
- Client Internet access

NiceLabel Web Printing application is running as a client named NiceLabel Web Client. Active Internet connection is necessary to run the application in online mode. Web Printing also supports offline mode, so you can run your applications even without the Internet connection. In this case, Web Printing application is installed on the local disk and runs as a standalone application.

## Enabling Offline Mode

Install the NiceLabel Web Client. It serves as a reliable backup for times when Internet connection fails and prevents server access.

The offline client loads the latest version of the form, label template, and label data (if connected to a database).

If the client has no Internet access, the application opens the form and label template that were used during the last session. Database data is limited to the last database table used or last queried data batch that was displayed when the client was used with an Internet connection.

Web Printing logs all printing activities to the Control Center. When the Internet connection fails, and the user uses the offline client to print, the log of print events is not lost. The next time the user is connected to the Internet and opens the offline printing client, the past printing activity log is uploaded to the Control Center.

## Changing the Offline Time Period

By default, the user can run the application in offline mode for a maximum of 24 hours.

While the user is in the offline mode, the information about printing events is still collected and all data is kept locally. When the connection to the Control Center server is re-established all logs are sent back to NiceLabel Control Center.

Information about user print events are not lost.

To change the offline time period, do the following:

1. Login to the desktop of the Windows Server where NiceLabel Web Printing is installed (Web Printing site).
2. Open the file `web.config` in a text editor.
3. Navigate to the section `<appSettings></appSettings>` and insert the following key:

```
<appSettings>
<add key="OutOfBrowserOfflinePeriod" value="1"/>
</appSettings>
```

4. Replace value **1** with your custom number of days.

**NOTE** The maximum number of days you can configure for the offline mode is **30**.



# Authentication

The information in this chapter relates to changes in the Web Printing site configuration file `web.config`. If you didn't change the path in the installer, the default location for the file `web.config` is `c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\`.

## Token-based Authentication

When the existing Web application tries to use the print engine within Web Printing, it must first authenticate itself. Token-based authentication does not require any user data exposed in the URL.

The existing Web application calls for an authentication service, passing the user name and password as parameters just once. The answer is a time-limited token, which is used in the query parameter when communicating with the Web Printing, so that it becomes known which solution file (.NSLN) must be used.

The Web Service `IntegrationService` supports a method `GetLoginToken`, that accepts the user name and password as the inbound parameters and provide the token (GUID) as the outbound parameter.

Web Service	<code>http://server- /PowerFormsWeb/AuthenticationService/IntegrationService.asmx</code>
Method	<code>public string GetLoginToken(string username, string password)</code>

The workflow that must be implemented on your end:

1. The calling application passes the login data (user name, password) by calling a Web Service.
2. The web service remembers the information.
3. The web service returns the token to the calling application, identifying the current session.
4. The calling application loads the solution by referencing the returned token (GUID) in the URL in the query string:

```
http://server/PowerFormsWeb/default.aspx?logintoken=1351ED23-9C74-411C-C887-40234952A116
```

where you have to replace `server` with the name of your server, and `PowerFormsWeb` with the exact location where you installed Web Printing, and `1351ED23-9C74-411C-C887-40234952A116` with the token you have received from the authentication service.

5. The Web Printing will provide the solution file that has been assigned to the provided user name.
6. After the successful login the token is invalidated and cannot be used again.

## Forms Authentication

The Web Printing site uses native user authentication by default (Forms authentication). This authentication mode uses the user names for Web Clients as defined in the Control Center.

After opening the Web Printing site, the user is asked for his user name and password. Both are verified against the Web Printing user configuration in the Control Center. If authentication is successful, the user's solution opens.

If you want to omit the display of the Login screen, you can force a specific user with the parameters in the query string in the URL. In this case, the user has already logged in some other application that has Web printing site embedded. The existing application will provide user's username/password in the query string, as the following example shows.

The Web Printing site is opened using the URL, such as

```
http://server/PowerFormsWeb/default.aspx?UserName=<username>&Password=<password>
```

Where the <username> is the name of the Web Client and the <password> is a password of the same user account as defined in Control Center. If the listed user exists, the solution defined for the user account opens.

With a default installation of Web Printing site the <password> is a plain text. To protect the password, you can enable the Advanced Encryption Standard (AES) and encrypt the password in the query string.

To enable password encryption, do the following:

1. Open `web.config` in a text editor.
2. Navigate to the section `<appSettings></appSettings>` and insert the following two keys:

```
<configuration>
<appSettings>
<add key="PasswordKey" value="passwordkey" />
<add key="PasswordIV" value="passworddiv" />
</appSettings>
```

3. Enter values for the fields `passwordkey` (password key) and `passworddiv` (password initialization vector). The password key length ranges from 16 to 32 characters, initialization vector length must be 16 characters.
4. Based on these two values, the encrypted password provided in the query string will be decrypted. If the decrypted password matches the user name and password as defined for the Web printing user in the Control Center, the associated solution will load.

For testing purposes of encrypting and decrypting the password, you can use the application `PasswordGenerator.exe` that you can find on NiceLabel DVD in the folder `\Utility\AES Password Encrypter`.

For example, the user `test` uses a password `veryhardtoguess`. The URL would be formed as

```
http://<server>/PowerFormsWeb/default.aspx?UserName=test&Password=uEe6X5Cy9Xjhad2PmKlowg%3d%3d
```

**NOTE** The `passwordkey` and `passworddiv` parameters define the actual encryption algorithm for the password. Different combinations of these parameters will result in a differently encrypted password.

## Windows Authentication

When the Web Printing site is embedded into a different Web page, user authentication is likely already done in that Web application using Windows authentication. In such cases, the default behavior of the Web Printing site can be changed to inherit the previously provided authentication.

When a user accesses the Web printing site from within the enterprise (inside the domain), Windows authentication can be used. In this case, the user is automatically identified by his Windows account, and no additional login is necessary.

The authentication mode can be changed by modifying the file `web.config` in the Web site root folder.

To change Authentication to 'Windows' allowing all users to access the page:

Previous settings:

```
<authentication mode="Forms"/>
```

New settings:

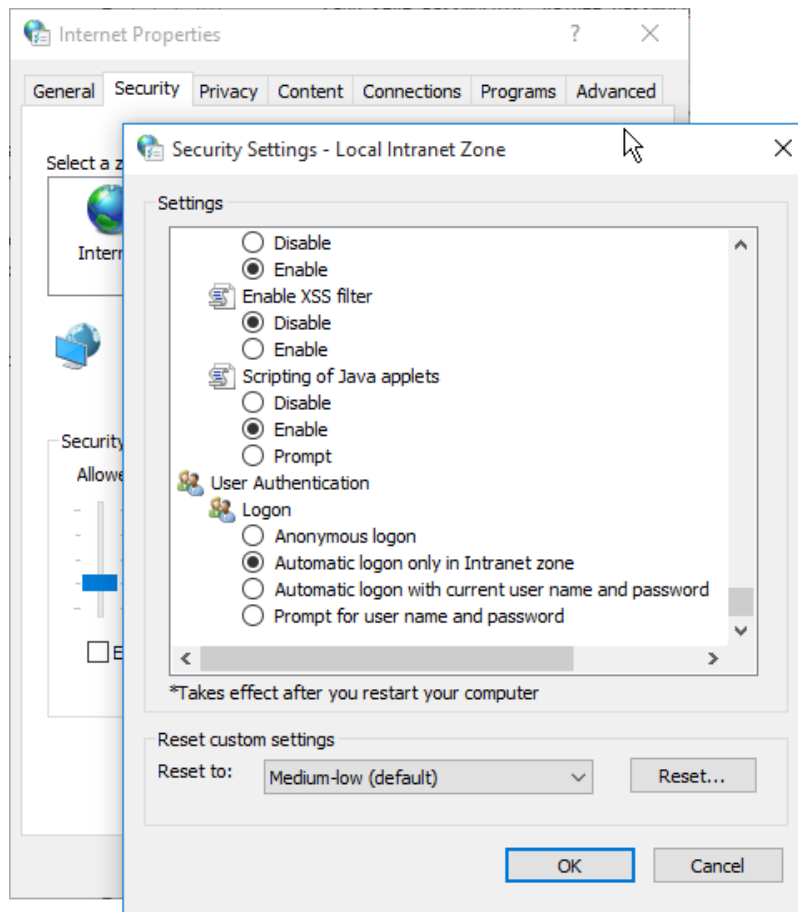
```
<authentication mode="Windows"/>
```

**NOTE** In addition to changing the configuration of the Web site in the file `web.config`, the Windows authentication mode in IIS manager must be enabled for the Web printing site.

When you change enable Windows authentication in Web Printing, the user authentication is no longer done inside Web Printing, but in the responsibility of the Web server (IIS).

Furthermore, the logon options can be configured using Internet Properties for the Local Intranet Zone:

- **Automatic logon options.** The browser will forward the credentials of the currently logged-in user to the Web server. The user is logged-in automatically.
- **Prompt for user name and password.** The browser will not forward the credentials of the currently logged-in user. The user will have to re-enter the username and password.



## Anonymous Access

This is an authentication mode that disables all login questions. Any user can connect to the Web Printing site and see the solution associated with the user Anonymous (the user Anonymous must exist as a Web Printing client in the Control Center). This mode is not suitable for private printing involving several concurrent users, because only one user can be logged in at one time. If somebody logs in while some other user is using the solution, the existing user will be disconnected. The last-connected user forces login.

To enable the anonymous access, change the following settings in the file `web.config`:

Original section:

```
<authorization>
<deny users="?" />
</authorization>
```

Changed section:

```
<authorization>
<allow users="?" />
</authorization>
```

You have to change the `web.config` file in the following folders:

- `%PROGRAMFILES%\NiceLabel\NiceLabel Web Printing\Web\`
- `%PROGRAMFILES%\NiceLabel\NiceLabel Web Printing\Web\Services\`

Anonymous access mode can also be used when the Web Printing site is embedded into an existing Web application and you know which user is logged into existing application.

## Setting an Authenticated User

The Web printing page can be implemented as a part of a different Web page. This includes its own authentication mechanism (which is not Windows authentication from AD). You can avoid additional login steps and use the same login names as used in the existing applications.

Based on the user name from an existing application, you can define which solution will open within the Web Printing site. If you do not specify the user name in the query string, the solution for the Control Center user Anonymous will open. You can override the user name Anonymous by providing the user name in the query string or to the `LoginName` control inside the page.

After changing the default authentication mode, the Web Printing site needs information about the authenticated Web Printing user (`LoginName`) so it knows which solution should be opened.

**NOTE** The solution is always loaded based on the login name – one user has always defined one solution.

The parameter about the user `LoginName` can be passed to the Web printing site in two different ways:

1. Passing the login name as a query string parameter.

The Web printing site is opened using the URL, such as

```
http://<server>/PowerFormsWeb/default.aspx?LoginName=userid
```

Where the `userid` is name of the user account defined in the Control Center. If the listed user exists, the solution defined for the user account will open.

2. The user name is provided in an HTML element on the site which hosts the Web printing

site in an IFRAME.

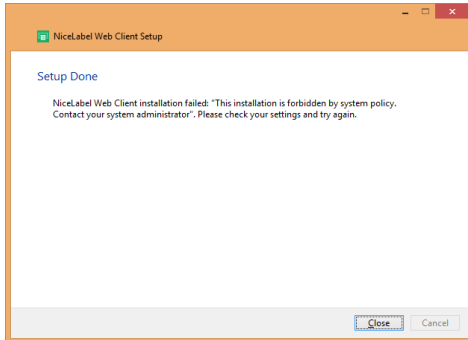
When the Web Printing site is embedded into another Web site, login name information can be provided on the hosting page. If default authentication is disabled and the query string does not include the `LoginName` parameter, the Website will search for an HTML element with the name `LoginName`. If found, its value property will be used for user name to use for login.

**NOTE** A single user account can only be used from one client. If multiple clients use the same account (`LoginName`), printing will only be possible from one client

# Troubleshooting

## Issue

When downloading the Web Printing application on Win2012 R2, the below shown error message might appear.



## Solution

This is a known issue on server systems. Per-user msi installations are disabled with group policy by default.

See the following two pages to solve this issue:

[https://msdn.microsoft.com/en-us/library/windows/desktop/aa368304\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/aa368304(v=vs.85).aspx)

and

[http://answers.microsoft.com/en-us/windows/forum/windows\\_xp-security/this-installation-is-forbidden-by-system-policy/ac1986be-a063-4b7b-834f-8fa56a8c0d04](http://answers.microsoft.com/en-us/windows/forum/windows_xp-security/this-installation-is-forbidden-by-system-policy/ac1986be-a063-4b7b-834f-8fa56a8c0d04)

# Support

## Online Support

You can find the latest builds, updates, workarounds for problems and Frequently Asked Questions (FAQ) on the NiceLabel [support site](#).

For more information, please refer to:

- Knowledge base: <http://www.nicelabel.com/support/knowledge-base>
- NiceLabel Support: <http://www.nicelabel.com/support/technical-support>
- NiceLabel Tutorials: <http://www.nicelabel.com/learning-center/tutorials>
- NiceLabel Forums: <http://forums.nicelabel.com/>

**NOTE** If you have a Service Maintenance Agreement (SMA), please contact the premium support as specified in the agreement.

## Contacting Technical Support

At some point, when you encounter a problem that you cannot solve by yourself, you may need to contact your support representative for additional assistance

<http://www.nicelabel.com/support/technical-support>

**NOTE** If you have a Service Maintenance Agreement (SMA), please contact the premium support as specified in the agreement.

Before contacting support it would be very helpful, if you collected information about the problem, the computer and operating system, you are running NiceLabel software on. You can use the following checklist.

	Checklist
<input type="checkbox"/>	What happened? Write down exactly the error message that you get or make a screen shot of the error.
<input type="checkbox"/>	When was the error discovered for the first time?
<input type="checkbox"/>	What did you expect to happen?
<input type="checkbox"/>	Have you discovered the problem earlier?
<input type="checkbox"/>	Can the error be reproduced?
<input type="checkbox"/>	How often did the error occur?
<input type="checkbox"/>	Have you tried to use NiceLabel software this way earlier?
<input type="checkbox"/>	If your problem is coming and going, please describe circumstances and under what conditions the error appears.
<input type="checkbox"/>	Which version of NiceLabel software are you using?
<input type="checkbox"/>	Which version of NiceLabel was used to design the label?
<input type="checkbox"/>	Can you provide the files that you were using when the issue occurred (data files, configuration files, label files, etc.)?
<input type="checkbox"/>	Which printer are you using?
<input type="checkbox"/>	Which version of printer driver are you using?
<input type="checkbox"/>	Which operating system are you using? In which language?
<input type="checkbox"/>	Are you using firewall? Are all the required ports open?
<input type="checkbox"/>	Which version of Microsoft .NET framework is installed?

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